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concentration of the gallium nitride group compound semiconductor increases substantially proportionally with said mixing ratio so as to obtain a desired carrier concentration of said gallium nitride group compound semiconductor; and

forming said gallium nitride group compound semiconductor by feeding said silicon-containing gas and said at least one other raw material gas at said mixing ratio.

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c1
21. (Amended) A method for producing a gallium nitride group compound semiconductor according to claim 19, wherein said gallium nitride group compound semiconductor comprises $\text{Al}_x\text{Ga}_{1-x}\text{N}$ ($0 \leq x \leq 1$).

22. (Amended) A method for producing a gallium nitride group compound semiconductor according to claim 20, wherein said gallium nitride group compound semiconductor comprises $\text{Al}_x\text{Ga}_{1-x}\text{N}$ ($0 \leq x \leq 1$).

23. (Amended) A method for producing a gallium nitride group compound semiconductor according to claim 19, wherein said gallium nitride group compound semiconductor comprises GaN.

24. (Amended) A method for producing a gallium nitride group compound semiconductor according to claim 20, wherein said gallium nitride group compound semiconductor comprises GaN.

c2
119. (Amended) A method for producing a gallium nitride group compound semiconductor according to claim 20, wherein said carrier concentration ranges from $1 \times 10^{17}/\text{cm}^3$ to $1 \times 10^{19}/\text{cm}^3$.

120. (Amended) A method for producing a gallium nitride group compound semiconductor according to claim 22, wherein said carrier concentration ranges from $1 \times 10^{17}/\text{cm}^3$ to $1 \times 10^{19}/\text{cm}^3$.

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121. (Amended) A method for producing a gallium nitride group compound semiconductor according to claim 24, wherein said carrier concentration ranges from $1 \times 10^{17}/\text{cm}^3$ to $1 \times 10^{19}/\text{cm}^3$.

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